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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/780,325	02/09/2001	Nicholas P. Wilt	3382-56903	6694

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EXAMINER

HARRISON, CHANTE E

ART UNIT	PAPER NUMBER
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2672

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/780,325

Applicant(s)

WILT ET AL.

Examiner

Chante Harrison

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 19-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5,6,10 and 18 is/are rejected.
- 7) ☒ Claim(s) 2-4,7-9 and 11-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 & 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group I (claims 1-18) and Group II (claims 19-23) in Paper No. 4 is acknowledged. The traversal is on the ground(s) that both claim groups are directed to the field of conversion between two sensory data models that are related by a power function. This is not found persuasive because Group II classified in Electrical Computers and Digital Data Processing Systems performs array processor operations which is different from the classification of Group I in Computer Graphics Processing, wherein Group I performs arithmetic processing of image data.

The requirement is still deemed proper and is therefore made FINAL.

Group II is further withdrawn from examination upon election of Group I.

### ***Priority***

2. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 as follows:

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification of in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)). The specific reference to any prior nonprovisional application must include the relationship (i.e., continuation, divisional, or continuation-in-part) between the applications except when the reference is to a prior application of a CPA assigned the same application number.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by S. Paul Tucker et al., U.S. Patent 5,926,406, 7/1999.

As per independent claim 1, Tucker discloses performing a plurality of the computationally less expensive floating point operations on an item of the sensory data (col. 11, ll. 33-41); combining results of the plural performed operations to yield an approximation of a result of the power function on the sensory data item (col. 11, ll. 42-43); and evaluating the expression using the approximation to provide a converted sensory data item (col. 11, ll. 42-43).

As per dependent claim 5, Tucker discloses executing a single instruction, multiple data floating point operation instruction to perform a first of the computationally less expensive floating point operations on multiple items of the sensory data together (col. 5, ll. 28-31; col. 6, ll. 40-45; col. 9, ll. 26-33; col. 14, ll. 37-45, 55-60).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6, 10 and 18 are rejected under 35 U.S.C. 103(a) as being obvious over Ikko Fushiki et al., U.S. Patent 6,462,748, 10/2002 and further in view of. Tucker et al., U.S. Patent 5,926,406, 7/1999.

The applied reference (Fushiki) has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29,

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1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

As per independent claim 6, Fushiki discloses a display monitor (Fig. 1 "47") a display unit operative to display an image on the display monitor, where the image is represented by perceptual image data comprising a plurality of color pixel data specifying colors in a perceptual color space, the perceptual color space having a non-unity gamma (col. 7, ll. 29-32); a physical image processor operative to perform an image processing operation on physical image data in which color pixel data specifies colors in a physical color space (col. 6, ll. 15-25), the physical color space having a unity gamma within a range (col. 7, ll. 25-31), and a perceptual/physical image converter operating to convert the perceptual image data to the physical image data according to a perceptual-to-physical conversion expression so as to permit the physical image processor to perform the image processing operation prior to display (col. 6, ll. 37-60), and to convert the physical image data back to the perceptual image data according to a physical-to-perceptual conversion expression (col. 6, ll. 37-60). Tucker discloses a color conversion expression involving a power function (i.e.  $x$ ) and a reverse color conversion expression involving an inverse power function (i.e.  $\log_2(a)$ ) after the image processing operation for display on the display monitor (col. 14, ll. 55-60; abstract; Fig. 3), the color image converter approximating the power function and

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the inverse power function as a weighted mathematical combination of plural computationally inexpensive floating point operations on items of the image data (col. 11, ll. 42-43), which Fushiki fails to disclose. It would have been obvious to one of skill in the art to include Tucker's expressions involving a power function and an inverse power function when converting to and from a color space, where the functions are approximated as a combination of plural floating point operations with the disclosure of Fushiki because Fushiki teaches specifying color data in both perceptual and physical color spaces and converting the data between the color spaces by taking into consideration the gamma adjustments needed to display the image data in either specified color space (col. 5-6).

As per dependent claim 10, Fushiki in view Tucker discloses the computationally inexpensive floating point operations comprise at least some of addition, subtraction, multiplication, square root and reciprocal operations (col. 3, ll. 20-25, 38-49).

As per dependent claim 18, Fushiki in view Tucker discloses a computer processor having in instruction set including at least one single instruction, multiple data floating point operation instruction (col. 5, ll. 28-31; col. 6, ll. 40-45; col. 9, ll. 26-33; col. 14, ll. 37-45, 55-60); wherein the perceptual/physical image converter approximates the power function (i.e.  $x$ ) and the inverse power function (i.e.  $\log_2(a)$ ) (col. 14, ll. 55-60; abstract) by evaluating an expression combining exponential functions composed of at least one of square, square root and reciprocal operations

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performed using the at least one single instruction, multiple data floating point operation instruction (col. 17, ll. 1-5).

Claims 2-4, 7-9 and 11-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



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***Conclusion***

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Chante Harrison whose telephone number is (703) 305-3937.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi, can be reached at (703) 305-4713.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

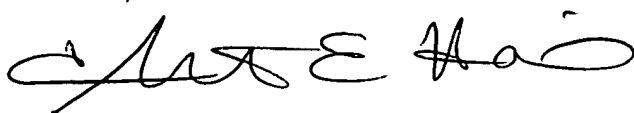
(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ch

June 27, 2003

A handwritten signature in black ink, appearing to read "Chante Harrison", is written over the date.